



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,043	06/15/2005	Ulf Petersson	37203	1158
116 7590 10/27/2008 PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108				
EXAMINER				
MARC, MCDIEMUNEL				
ART UNIT		PAPER NUMBER		
3664				
MAIL DATE		DELIVERY MODE		
10/27/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,043

Applicant(s)

PETERSSON ET AL.

Examiner

MCDIEUNEL MARC

Art Unit

3664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-56 are pending.
2. The abstract of the disclosure is objected to because of the word “means” and “invention”. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 6-16, 22 and 34-55 are rejected under 35 U.S.C. 102(a) as being anticipated by cited prior art **Peless et al.** (WO 9959042 A1).

As per claims 1, 6-16, 22 and 34-55, **Peless et al.** teaches a system and an associated method comprising an autonomous robot for systematically moving about an area to be covered. Operating of the robot is arranged with the help of boundary and obstacle markers (48, 50) formed of wires and connected to a power supply via a wave generator (62). A magnetic sensor (72) for sensing the magnetic field of the markers is arranged on the robot (70). In one of embodiments the signals for the markers are formed by pulses (64, 66, 68), with a short synchronization pulse (64) as introduction of every period (See page 9, line 6, page 10, line 14;

fig. 3A, 3B, 3C). The robot can be used for household appliances, including a vacuum cleaner and lawnmower that equates to operating an automatic device (2) by means of an electronic directing system, said system comprising at least one first electrical cable (1,4,5,6) connected to at least one first signal generator (3,7,8) and at least one sensing system (11,12,13) arranged on said device (2), said sensing system (11,12,13) detecting at least one magnetic field being transmitted via said cable (1,4,5,6) and propagating through the air, the sensing system transmitting a processed signal to at least one driving means which contributes to the movements of said device in relation to a surface, characterized in that said first signal generator (3,7,8) transmits a current through said first cable (1,4,5,6), said current during a part of time is in a state of rest were it is substantially constant, said state of rest periodically being interrupted by at least one first characteristic current pulse (20).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(c), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 25-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over cited prior art Peless et al. in view of cited prior art **Bergvall et al.** (WO 9938056 A1).

As per claims 25-33, **Peless et al.** teaches essential features of the invention substantially as claimed, but Peless et al. does not explicitly teach a sensing unit that detects a magnetic field (50/50') which is being generated from at least one current pulse; determining state of rest on which side of a cable; interpretation signal being dependent on which side of the cable; a pulse ration correspond to a time division between pulse signal and no pulse signal.

Bergvall et al. teaches an electronic search system for a working tool, including a border cable is placed so that it separates an inner area from an outer area and one or more search cables are placed within the inner area. A signal generator feeds the border cable with current containing at least two alternating-current components of different frequency, whose magnetic field affects a sensing unit located on the tool, while the search cables are fed by virtually identical current, but where the current direction alternates in time in being either in or out of phase in relation to the current direction in the border cable. Thereby magnetic fields in the different areas will create different time patterns and a control unit of the tool can separate different areas equates to a sensing unit that detects a magnetic field (50/50') which is being generated from at least one current pulse; determining state of rest on which side of a cable;

interpretation signal being dependent on which side of the cable; a pulse ration correspond to a time division between pulse signal and no pulse signal (See page 15, lines 1-19; figs. 6, 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Peless' et al. robot with the electronic search system of Bergvall et al., because this modification would have introduced the border cables into Peless' et al. robot, thereby improving the efficiency and pulse generation of the electronic demarcating system.

8. Claims 2-5, 17-21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over cited prior art **Peless et al.** in view of Schmitt (*Pulse Dispersion in a Gyrotropic Plasma*, 1965).

As per claims 2-5, 17-21, 23 and 24, **Peless et al.** teaches essential features of the invention substantially as claimed, but Peless et al. does not explicitly teach a time intervals (28,29) within which the system (11,12,13) detects magnetic fields based on the properties of said first current pulse (20); said adaptation refers to the synchronization of frequency at which said sensing system (11,12,13) operates, which is being made by said system (11,12,13) based on said first current pulse (20); said adaptation refers to the synchronization of said time intervals (28,29), which is being made by said sensing system (11,12,13), is based on the periodicity, time occurrence and/or the durability of said first current pulse (20); said time intervals (28, 29) are being adapted so that the sensing system (11, 12, 13) is able to detect the presence of current pulses (20, 22, 24, 26) transmitted from said directing system, said sensing system (11, 12, 13)

during the await of the next pulse (20, 22, 24, 26) to appear disregards pulses occurring outside said time intervals (28, 29); sensing system (11,12,13) detects the positive and negative flank of a current pulse (20,22,24,26), whereby the time distance between these two flanks settles the processing said system makes based on the detected flanks; the sensing system (11,12,13) detects said flanks by detecting occurred voltage pulses.

Schmitt teaches a time intervals (28,29) within which the system (11,12,13) detects magnetic fields based on the properties of said first current pulse (20) (see fig. 1); said adaptation refers to the synchronization of frequency at which said sensing system (11,12,13) operates, which is being made by said system (11,12,13) based on said first current pulse (20) (see Introduction paragraphs 1-3); said adaptation refers to the synchronization of said time intervals (28,29), which is being made by said sensing system (11,12,13), is based on the periodicity, time occurrence and/or the durability of said first current pulse (20) (see Introduction, particularly third paragraph wherein short-time being interpreted as periodic); said time intervals (28, 29) are being adapted so that the sensing system (11, 12, 13) is able to detect the presence of current pulses (20, 22, 24, 26) transmitted from said directing system, said sensing system (11, 12, 13) during the await of the next pulse (20, 22, 24, 26) to appear disregards pulses occurring outside said time intervals (28, 29) (see page 934, second col. last paragraph); sensing system (11,12,13) detects the positive and negative flank of a current pulse (20,22,24,26), whereby the time distance between these two flanks settles the processing said system makes based on the detected flanks (see page 934, second col. last paragraph, wherein high-voltage pulse being taken as flanks); the sensing system (11,12,13) detects said flanks by detecting occurred voltage pulses (see page 934, second col. last paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Peless' et al. robot with the pulse dispersion of Schmitt, because this modification would have introduced the electromagnetic pulses into Peless' et al. robot, thereby improving the efficiency and pulse generation of the electronic demarcating system.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MCDIEUNEL MARC whose telephone number is (571)272-6964. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on (571) 272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/McDieunel Marc/
Examiner, Art Unit 3664
Tuesday, October 07, 2008
/KHOI TRAN/
Supervisory Patent Examiner, Art Unit 3664